

ABSTRACT

An improved multi layered frangible seal is bonded over the interior opening of the dispensing nozzle of a cartridge container of the type used in combination with an application gun providing a leak proof closure that automatically breaks open in a defined configuration when sufficient internal cartridge pressure is brought to bear against the seal. The seal invention is constructed of a first layer of leak proof frangible material that is bonded to an additional layer of material. The additional layer of material contains one or more cut through and/or cut out void configurations that forms a breaking pattern that turns the additional layer into a break and tear template layer. Bonding the template layer to the frangible layer strengthens the surface area of the frangible layer every where except in the area of the breaking pattern by leaving only the frangible layer covering over the cut through and / or cut out void configuration of the template layer. This leaves a weakness in the multi layered seal only in the area of the breaking pattern which forces the seal to automatically break open and tear only in the weaker single frangible layered area of the breaking pattern when bonded over the interior opening of the cartridge nozzle and sufficient pressure is brought to bear against the seal when the cartridge is pressurized by the application gun. The use of a separate layer of material to form the frangible area of the seal provides the ability to control the thickness of the seal material that must break open with the precision necessary to allow the burst pressure of the seal to be precisely regulated. This multi layered construction method produces a closure seal that is strong enough to remain intact when subjected to the pressure created during the filling operation of the cartridge and yet weak enough to automatically break open and dispense the contents at a variable burst pressure that can be precisely set. An uncut area of the breaking pattern keeps the broken open portion of the seal attached to the nozzle preventing any contamination of the dispensed product when the seal breaks open.